

## Pneumococcosuria in a 4-year old girl

Dear Editor,

*Streptococcus pneumoniae* is a notorious human pathogen causing pneumonia, meningitis, otitis media and septicemia. However, literature data about its isolation in urine samples of both adults<sup>1</sup> and children<sup>2</sup> are limited. We report here a case of *S. pneumoniae* isolation in a single urine sample of a 4-year old girl. The child presented to the emergency room of the pediatric clinic with dysuria and increased urinary frequency during the last 4 days. There was no fever, abdominal pain or macroscopic hematuria. There was no report of previous urinary tract infection, genitourinary abnormality or chronic kidney disease in her past medical history. She had completed her vaccination for *S. pneumoniae* with 4 doses of the heptavalent pneumococcal conjugate vaccine at the age of 1.5 according to the national vaccination program. Clinical examination did not reveal any findings. The child had normal external genitalia and no tenderness at the palpation of the abdomen.

Microscopic examination of the urinary sediment revealed 4-6 polymorphonuclear cells and 0-1 erythrocytes/ optical field. Urine culture was performed on Columbia 5% horse blood agar and MacConkey agar plates. After overnight incubation, pure growth of small greenish colonies at a concentration of approximately 10<sup>4</sup> CFU/ml on blood agar was observed. Gram stain of the isolate revealed Gram-positive lancet-shaped diplococci. Subculture onto chocolate agar and incubation at 37°C with 5% CO<sub>2</sub> led to the growth of *S. pneumoniae* characteristic colonies surrounded by a zone of α-hemolysis. The microorganism was optocin sensitive and was later identified by Vitek 2 (bioMérieux, France) as *S. pneumoniae*. The automated system reported an “excellent identification”. The isolate was sensitive to oxacillin, ceftazidime, clyndamycin, levofloxacin, vancomycin and teicoplanin by the disc diffusion method.

The pediatrics department did not prescribe antibiotic treatment and suggested a second control visit after 4 days. At the second visit the symptoms were resolved and microscopic examination of the urinary sediment showed 0-1 cells/ optical field. Apart from urine, samples from the perineum, nose and pharynx were sent to the laboratory in order to check for the presence of pneumococci in other body sites. All cultures were performed onto chocolate agar plates and incubated at 37°C with 5% CO<sub>2</sub> but resulted negative for *S. pneumoniae*.

Isolation of *S. pneumoniae* in urine samples is rare and its clinical significance is questioned. Furthermore, the medium and CO<sub>2</sub> concentrations necessary for its growth are not applied routinely for urine cultures. Cases of certain urinary tract infections have been reported; they considered however children with chronic kidney disease.<sup>3</sup> In the only to date large scale study, the authors concluded that the presence of *S. pneumoniae* in the urine of children is to be attributed to perineal contamination.<sup>2</sup> Even though we were not able to isolate pneumococci from other body sites, we postulate that our finding could possibly be attributed to hand contamination from the perineum or the nasopharynx.

### References

1. Nguyen VQ, Penn RL. Pneumococcosuria in adults. J Clin Microbiol. 1988; 26: 1085-1087.
2. Miller MA, Kaplan BS, Sorger S, Knowles KF. Pneumococcosuria in children. J Clin Microbiol. 1989; 27: 99-101.
3. Burckhardt I, Zimmermann S. Streptococcus pneumoniae in urinary tracts of children with chronic kidney disease. Emerg Infect Dis. 2011; 17: 120-122.

**Keywords:** Pneumococcosuria, child, female, dysuria, *Streptococcus pneumoniae*

### Conflicts of interest

None to declare

Meletis G<sup>1</sup>, Toulipoulou A<sup>2</sup>, Themelis P<sup>1</sup>

<sup>1</sup>Department of Clinical Microbiology

<sup>2</sup>Pediatrics Department

Veroia General Hospital, Veroia, Greece

**Corresponding author:** Meletis Georgios, Veroia General Hospital, Papagou District, Veroia, Greece, tel: +306974282575, e-mail: meletisg@hotmail.com